

U.S. Department
of Transportation
**Federal Highway
Administration**

**LTPP Seasonal Monitoring
Program**
Site Monitoring Suspension
Status Report
Section 421606
Altoona, Pennsylvania

SEASONAL MONITORING PROGRAM SUSPENSION STATUS REPORT

PENNSYLVANIA SECTION 421606

I. INTRODUCTION

The seasonal site 421606 near Altoona, Pennsylvania was installed on August 09 - August 10, 1995. Seasonal data was collected continuously from August 09, 1995 to August 08, 1996, and September 04 1997 to October 27, 1998. Table 1 provides a summary of the data collected for Round 1 on August 10, 1995 to August 08, 1996, and Table 2 provides the summary for Round 2 on September 04, 1997 to October 27, 1998. On October 27, 1998, all site suspension activities were completed at this site according to LTPP Directive SM-8 "Suspension of SMP Site Monitoring Activities". The second Round of SMP data concludes the seasonal data collection at the LTPP site 421606.

This report entitled "SMP Site Monitoring Suspension Status Report" details the suspension preparation activities, site specific conditions, and provides information pertinent to the seasonal site 421606.

II. SUSPENSION PREPARATION ACTIVITIES

The suspension preparation activities at site 421606 were conducted during the final site visit on October 27, 1998. A manual distress survey of the entire section was conducted on September 17, 1998. The site location exhibits slight to moderate transverse cracking, some minor polishing in the wheel path. Over the entire surface, there is some minor cracking/spalling; possibly silica reactive aggregate. The site paint markings were refreshed in conjunction with the MDS survey. On this day, two sets of FWD tests, one set of elevations, joint opening measurements, joint faulting measurements, and a distress survey of the instrumentation area were conducted. The water table measurements and the manual resistivity measurements (2 and 4 point) were performed in the morning and afternoon. The Onsite datalogger was downloaded before being dismantled. Two sets of TDR traces and resistance voltages were extracted by the mobile datalogger. The snap ring holes were cleaned and sprayed with graphite grease. The trench from the instrument hole to pavement edge were patched with 'quickcrete' fast-setting concrete. A more permanent patch should be done in this area (i.e. remove and replace material).

The air temperature probe, tipping bucket, and upper part of the support pole were dismantled. The lead wires from the air temperature probe and tipping bucket were pulled out of the cabinet and sprayed with an anti-corrosive compound. The above ground conduit from the pole to the equipment cabinet was removed and the resulting hole in the back of the cabinet sealed. The bottom part of the support pole was cleaned and lubricated prior to installing the end cap.

After all the wires were disconnected from the control panel, the panel was detached from the equipment cabinet with the CR10 datalogger, terminal strip, and the battery pack attached to it. The TDR cables were checked to ensure that they were labeled. The TDR cables, resistivity cable and MRC lead wires were sprayed with anti-corrosion compounds and sealed with desiccant packs in air tight bags. All cables were hung up high inside the equipment cabinet. After the last piezometer reading was recorded, the pipe was cleaned and sealed with grease. The access cover and seat were cleaned and lubricated before being covered and brought up to grade with native soil.

The Profilometer survey corresponding to the close-out was conducted on October 28, 1998. The IRI's ranged from 1.566m/km (am) to 1.612m/km (pm).

All the necessary suspension activities were completed on October 27, 1998. The dismantled equipment was removed from the site. The suspended site contains all the under ground instrumentation and equipment, and an equipment cabinet with all the cables in it. The equipment cabinet was locked before leaving the site. At the time of de-commission, NARO was not sure of the status of this site relative to the plans for LTPP SMP-II. In this regard, the cabinet and cables remained in place. Future plans are to remove the cabinet from the site and bury the cables.

III. SPECIAL SITE CONDITIONS

The installation of site 421606 followed the "LTPP Seasonal Monitoring Program: Instrument Installation and Data Collection Guidelines" closely. Core holes exist in the slab adjacent to the 5+00 end. Ideally, the instrument hole should have been in a slab that did not contain any deformations. Since the 0+00 end also contained core holes, the 5+00 end remained the preferred location. Rain arrived before all instrumentation installation could be completed. A tent was erected over the instrument hole to prevent water from entering it. The MRC #1 and #2 sensors were not working at the time of suspension. MRC #1 has been faulty since March of 1996 with MRC #2 failing since September 1997. The TDR #9 sensor has functioned intermittently since March of 1996.

IV. SUPPLEMENTAL INFORMATION

Figure 1 shows the locations of the installed instrumentation at the site. The instrumentation hole is at Station 5+35 and the piezometer is at Station 4+00. Table 3 gives elevations of the portion of test section 421606 that was used for elevation measurements. All offsets are measured from the outside pavement edge at the pavement shoulder interface.

At the time of suspension, other than the MRC #1 and #2 sensors, there were no unresolved problems with any of the sensors. The plots from ONSFIELD, MOBFIELD and SMPCHECK follow expected trends and produce expected values. Pictures from the site suspension are provided at the end of this document.

TABLE 1

$$\begin{array}{r} 421 \\ \hline \end{array}$$
[illegible]

TABLE 2

$$\begin{array}{r} 421 \\ 16081 \end{array}$$
[illegible]

Table 3 . Surface Elevation Measurements

LTPP Seasonal Monitoring Study	State Code	[42]
Surface Elevation Measurements	Test Section Number	[1606]

Survey Date	October 27, 1998
Surveyed By	B. Henderson
Surface Type	P-CC
Benchmark	Observation Piezometer - 1.000 meters - assumed

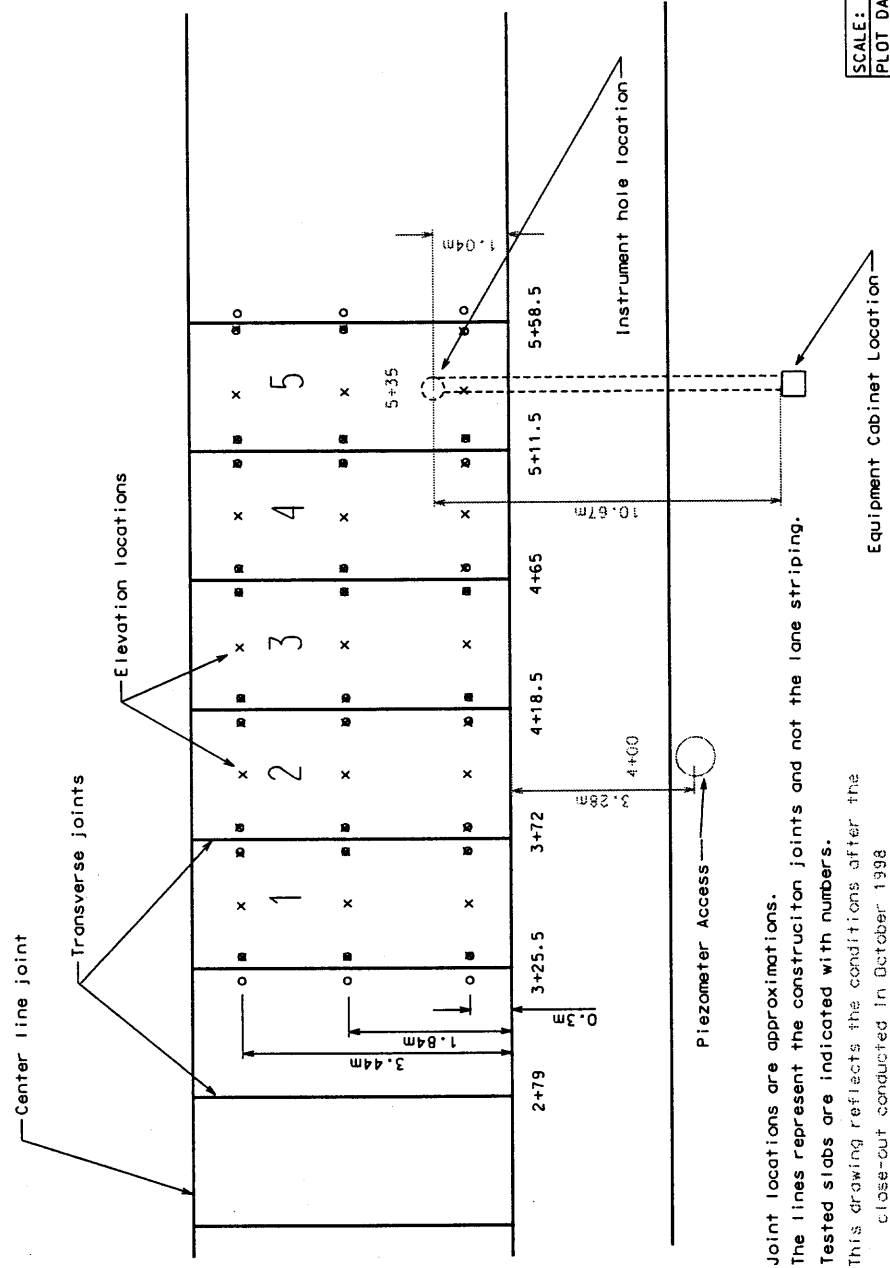
STATION	PE m offset 0.30	ML m offset 1.84	ILE m offset 3.44
3+25.5	1.0900	1.1200	1.1575
3+48.75	1.1425	1.1700	1.2000
3+72	1.1700	1.1950	1.2350
3+72	1.1700	1.1950	1.2350
3+95.25	1.2100	1.2375	1.2700
4+18.5	1.2375	1.2650	1.2925
4+18.5	1.2350	1.2650	1.2900
4+41.75	1.2725	1.3000	1.3275
4+65	1.3000	1.3275	1.3650
4+65	1.3000	1.3275	1.3650
4+88.25	1.3475	1.3725	1.4050
5+11.5	1.3750	1.4000	1.4350
5+11.5	1.38	1.40	1.44
5+24.75	1.42	1.44	1.48
5+58	1.45	1.47	1.51

PE	Pavement Edge
OWP	Outer Wheel Path
ML	Mid Lane
IWP	Inner Wheel Path
ILE	Inner Lane Edge

Notes: 1. Offsets are measured from the edge of pavement



Figure 1. Plan view of Section 421606 - Post Suspension



- Notes:
- 1. Joint locations are approximations.
 - 2. The lines represent the construction joints and not the lane striping.
 - 3. Tested slabs are indicated with numbers.
 - 4. This drawing reflects the conditions after the close-out conducted in October 1998

SCALE:	N.T.S.
PLOT DATE:	27.1.99
CREATED BY:	S.M.



Pavement Condition, Seasonal Site 421606, October 1998, During Suspension Activities



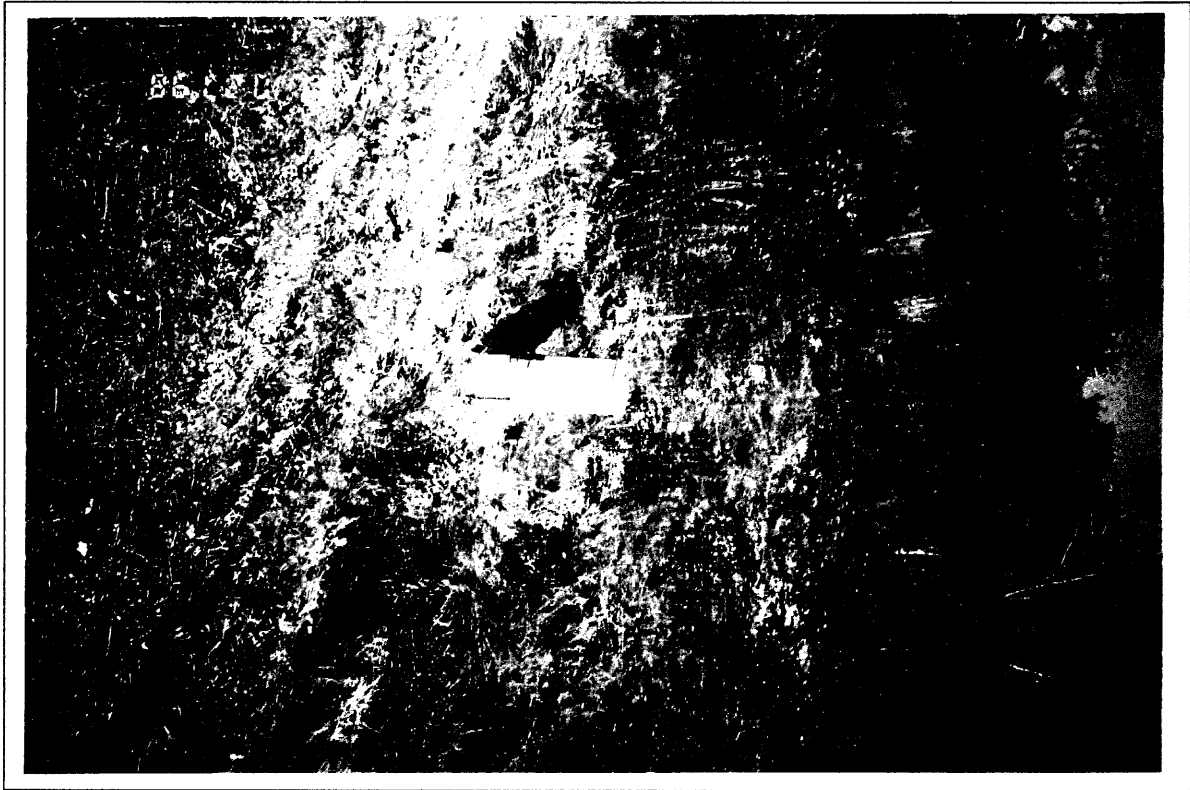
Pavement Condition, Seasonal Site 421606, October 1998, During Suspension Activities



Instrumentation Location, Seasonal Site 421606, October 1998, During Suspension Activities



Instrument Hole, Seasonal Site 421606, October 1998, After Suspension Activities



Instrumentation Location, Seasonal Site 421606, October 1998, After Suspension Activities



Piezometer Location, Seasonal Site 421606, October 1998, During Suspension Activities